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100 WEST FIFTH STREET, 10TH FLOOR
TULSA, OK 74103

EXAMINER	
TRAN, THUY V	

ART UNIT	PAPER NUMBER
2821	

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/713,290	DULANEY ET AL.	
	Examiner	Art Unit	
	Thuy V. Tran	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *amendment filed 05/31/2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 7-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-5 and 7-33* is/are rejected.

7)☒ Claim(s) *2* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *06/07/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This is a response to the Applicants' amendment submitted on May 31st, 2005. In virtue of this amendment,

- Claims 1-28 were originally filed;
- Claim 6 is canceled;
- Claims 29-33 are newly added; and thus,
- Claims 1-5 and 7-33 are now presented in the instant application.

Upon reconsideration, the indicated allowability of claims 3, 9-11, 14, 16, 18, and 28 in the previous Office Action (mailed 02/09/2005) is hereby withdrawn in view of the newly discovered references to Bogdan (U.S. patent No. 6,040,661) and to Caldeira et al. (U.S. Patent No. 5,623,187). Rejections based on the newly cited references follow:

Claim Objections/ Minor Informalities

1. Claim 9 is objected to because of the following informalities:

Claim 9, line 1, "6" should be changed to --1--.

Appropriate correction is required.

Double Patenting Rejections

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 30 and 33 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 14 and 20-22 of U.S. Patent No. 6,650,067. Although the conflicting claims are not identical, they are not patentably distinct from each other because (i) the two groups of claims are directed to a common subject matter, and (ii) the function of varying an operating parameter of the programmable processor is considerably included in the function of controlling operation of the electronic ballast of the programmable processor, which would have been obviously within the recognition of a person skilled in the art.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3-5, 7-10, 14-19, 23-30, and 32-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Caldeira et al. (U.S. Patent No. 5,623,187).

With respect to claim 1, Caldeira et al. discloses, in Figs. 13-17, an electronic ballast for supplying electrical excitation to a filamentless discharge lamp [50] (see col. 1, lines 25-25-26); the electronic ballast comprises (1) power conditioning circuitry [10, 20] for conditioning electrical power received from a source of electrical power (see Fig. 13), and producing a conditioned power signal [DC]; and (2) a lamp supply circuit [30, control A, control B, control C, control D] for receiving the conditioned power signal and producing electrical signals to operate the filamentless discharge lamp [50]; said lamp supply circuit includes (i) a programmable processor [100] (see col. 21, lines 38-41) operable to vary an operating parameter

(see col. 21, lines 48-53) of the lamp supply circuit to enable operation of a plurality of lamp types or sizes (see Abstract, lines 13-17), (ii) an ignition circuit [40] (see col. 17, line 45) for producing an oscillating voltage signal for igniting the discharge lamp [50], and (iii) a sustaining circuit [control D] (see Fig. 14) for producing an oscillating current signal to sustain ignition of the discharge lamp [50].

With respect to claim 3, Caldeira et al. discloses that the programmable processor [100] is further operable to produce an oscillating processor signal for use in oscillating the supply circuit at a plurality of frequencies to operate discharge lamps of different types or sizes (see col. 21, lines 55-63).

With respect to claims 4-5, Caldeira et al. discloses, in Figs. 13-14 and col. 16, line 22 – col. 23, line 3, that the programmable processor [100] oscillates (via oscillator [63]; see Fig. 14) the lamp supply circuit during and after ignition of the discharge lamp [50].

With respect to claim 7, Fig. 14 of Caldeira et al. shows that the sustaining circuit is inductorless (the two circuits [60, 70] are voltage/current monitors excluded from the sustaining circuit [control D]).

With respect to claim 8, Caldeira et al. discloses, in Figs. 13-14, that the electronic ballast further comprises (1) a switch [Q2, Q3] having a conductive state and a nonconductive state, and (2) a driver [control B] for switching the switch between its conductive and nonconductive states based on an oscillating processor signal (see Fig. 14), thereby producing the oscillating current signal.

With respect to claim 9, Caldeira et al. discloses, in Figs. 13-17, that the electronic ballast further comprises a converter [105] (see Fig. 17) for converting an oscillating processor signal to

analog format, and producing an analog oscillating signal, and an amplifier [67] (see Fig. 14) for amplifying the analog oscillating signal and producing said oscillating current signal.

With respect to claim 10, Caldeira et al. discloses that the power conditioning circuitry [10, 20] includes a filter circuit for removing noise from electrical power provided by the electrical power source, a power factor correction circuit for adjusting the power factor of the filtered power signal to produce a corrected power signal, and a power supply circuit for converting electrical power received from the filtered power signal to a power level sufficient to operate the electronic ballast (see col. 16, line 58 – col. 17, line 19).

With respect to claim 14, Caldeira et al. discloses that the electronic ballast further comprises a voltage monitor [60] (see Fig. 14) for monitoring the electrical signals provided to the discharge lamp [50], and producing a voltage monitor signal corresponding to the electrical signals sensed by the voltage monitor [60].

With respect to claim 15, Caldeira et al. discloses, in Figs. 13-17, that the programmable processor is further operable to control an oscillating processor signal based on the voltage monitor signal.

With respect to claim 16, Caldeira et al. discloses that the electronic ballast further comprises a current monitor [70] (see Fig. 14) for monitoring the electrical signals provided to the discharge lamp [50], and producing a current monitor signal corresponding to the electrical signals sensed by the current monitor [70].

With respect to claim 17, Caldeira et al. discloses, in Figs. 13-17, that the programmable processor is further operable to control an oscillating processor signal based on the current monitor signal.

With respect to claim 18, Caldeira et al. discloses, in Figs. 13-17, an electronic ballast for supplying electrical excitation to a discharge lamp [50] (see col. 1, lines 25-25-26); the electronic ballast comprises (1) power conditioning circuitry [10, 20] for conditioning electrical power received from a source of electrical power (see Fig. 13), and producing a conditioned power signal [DC], and (2) a lamp supply circuit [30, control A, control B, control C, control D] for receiving the conditioned power signal and producing electrical signals to operate the discharge lamp [50]; said lamp supply circuit includes (i) a programmable processor [100] (see col. 21, lines 38-41) operable to produce an oscillating processor signal for use in oscillating the supply circuit at a plurality of frequencies to operate discharge lamps of different types or sizes (see col. 21, lines 48-53; Abstract, lines 13-17), (ii) an ignition circuit [40] (see col. 17, line 45) for receiving an oscillating processor signal and producing an oscillating voltage signal for igniting the discharge lamp [50], and (iii) a sustaining circuit [control D] (see Fig. 14) for receiving an oscillating processor signal and producing an oscillating current signal to sustain ignition of the discharge lamp [50].

With respect to claim 19, Caldeira et al. discloses that the power conditioning circuitry [10, 20] includes a filter circuit for removing noise from electrical power provided by the electrical power source and producing a filtered power signal, a power factor correction circuit for adjusting the power factor of the filtered power signal to produce a corrected power signal, and a power supply circuit for converting electrical power received from the filtered power signal to a power level sufficient to operate the electronic ballast (see col. 16, line 58 – col. 17, line 19).

With respect to claim 23, Caldeira et al. discloses that the electronic ballast further comprises a voltage monitor [60] (see Fig. 14) for monitoring the electrical signals provided to the discharge lamp [50], and producing a voltage monitor signal corresponding to the electrical signals sensed by the voltage monitor [60].

With respect to claim 24, Caldeira et al. discloses, in Figs. 13-17, that the programmable processor is further operable to control an oscillating processor signal based on the voltage monitor signal.

With respect to claim 25, Caldeira et al. discloses that the electronic ballast further comprises a current monitor [70] (see Fig. 14) for monitoring the electrical signals provided to the discharge lamp [50], and producing a current monitor signal corresponding to the electrical signals sensed by the current monitor [70].

With respect to claim 26, Caldeira et al. discloses, in Figs. 13-17, that the programmable processor is further operable to control an oscillating processor signal based on the current monitor signal.

With respect to claim 27, Fig. 14 of Caldeira et al. shows that the sustaining circuit is inductorless (the two circuits [60, 70] are voltage/current monitors excluded from the sustaining circuit [control D]).

With respect to claim 28, Caldeira et al. discloses, in Figs. 13-17, an electronic ballast for supplying electrical excitation to a discharge lamp [50] (see col. 1, lines 25-25-26); the electronic ballast comprises (1) power conditioning circuitry [10, 20] for conditioning electrical power received from a source of electrical power (see Fig. 13), and producing a conditioned power signal [DC], and (2) a lamp supply circuit [30, control A, control B, control C, control D] for

receiving the conditioned power signal and producing electrical signals to ignite and sustain ignition of the discharge lamp [50]; said lamp supply circuit includes (i) a programmable processor [100] (see col. 21, lines 38-41) operable to produce an oscillating processor signal for use in oscillating the supply circuit at a plurality of frequencies to operate discharge lamps of different types or sizes (see col. 21, lines 48-53; Abstract, lines 13-17), and (ii) an inductorless sustaining circuit (the two circuits [60, 70] are voltage/current monitors excluded from the sustaining circuit [control D]) fro receiving the oscillating processor signal and producing an oscillating current signal for operating the discharge lamp [50] after ignition.

With respect to claim 29, Caldeira et al. discloses, in Figs. 13-17, an electronic ballast for supplying electrical excitation to a discharge lamp [50] (see col. 1, lines 25-25-26); the electronic ballast comprises (1) power conditioning circuitry [10, 20] for conditioning electrical power received from a source of electrical power (see Fig. 13), and producing a conditioned power signal [DC], and (2) a lamp supply circuit [30, control A, control B, control C, control D] for receiving the conditioned power signal and producing electrical signals to operate the discharge lamp [50]; said lamp supply circuit includes a programmable processor [100] (see col. 21, lines 38-41) operable to vary an operating parameter of the lamp supply circuit to enable operation of a plurality of lamp types or sizes; said programmable processor [100] is further operable to produce an oscillating processor signal for use in oscillating the supply circuit at a plurality of frequencies to operate discharge lamps of different types or sizes (see col. 21, lines 48-53; Abstract, lines 13-17).

With respect to claim 30, Caldeira et al. discloses, in Figs. 13-17, an electronic ballast for supplying electrical excitation to a discharge lamp [50] (see col. 1, lines 25-25-26); the electronic

ballast comprises (1) power conditioning circuitry [10, 20] for conditioning electrical power received from a source of electrical power (see Fig. 13), and producing a conditioned power signal [DC]; said power conditioning circuitry [10, 20] includes a filter circuit for removing noise from electrical power provided by the electrical power source and producing a filtered power signal, a power factor correction circuit for adjusting the power factor of the filtered power signal to produce a corrected power signal, and a power supply circuit for converting electrical power received from the filtered power signal to a power level sufficient to operate the electronic ballast (see col. 16, line 58 – col. 17, line 19), and (2) a lamp supply circuit [30, control A, control B, control C, control D] for receiving the conditioned power signal and producing electrical signals to operate the discharge lamp [50]; said lamp supply circuit includes a programmable processor [100] (see col. 21, lines 38-41) operable to vary an operating parameter of the lamp supply circuit to enable operation of a.plurality of lamp types or sizes (see col. 21, lines 48-53; Abstract, lines 13-17).

With respect to claim 32, Caldeira et al. discloses, in Figs. 13-17, an electronic ballast for supplying electrical excitation to a discharge lamp [50]; the electronic ballast comprises (1) power conditioning circuitry [10, 20] for conditioning electrical power received from a source of electrical power (see Fig. 13), and producing a conditioned power signal (which is DC; see Fig. 13), (2) a lamp supply circuit [30] for receiving the conditioned power signal and producing electrical signals to operate the discharge lamp [50]; said lamp supply circuit includes a programmable processor [100] (which is configured in control C; see col. 21, lines 38-41) operable to vary an operating parameter (which is operating frequency of the inverter; see col. 21, lines 49-53) of the lamp supply circuit to enable operation of a plurality of lamp types or

sizes (see Abstract, lines 13-17), and (3) a voltage monitor [60] (see Fig. 14) for monitoring the electrical signals provided to the discharge lamp [50] and producing a voltage monitor signal corresponding to the electrical signals sensed by the voltage monitor.

With respect to claim 33, Caldeira et al. discloses, in Figs. 13-17, an electronic ballast for supplying electrical excitation to a discharge lamp [50]; the electronic ballast comprises (1) power conditioning circuitry [10, 20] for conditioning electrical power received from a source of electrical power (see Fig. 13), and producing a conditioned power signal (which is DC; see Fig. 13), (2) a lamp supply circuit [30] for receiving the conditioned power signal and producing electrical signals to operate the discharge lamp [50]; said lamp supply circuit includes a programmable processor [100] (which is configured in control C; see col. 21, lines 38-41) operable to vary an operating parameter (which is operating frequency of the inverter; see col. 21, lines 49-53) of the lamp supply circuit to enable operation of a plurality of lamp types or sizes (see Abstract, lines 13-17), and (3) a current monitor [70] (see Fig. 14) for monitoring the electrical signals provided to the discharge lamp [50] and producing a voltage monitor signal corresponding to the electrical signals sensed by the voltage monitor.

6. Claims 29 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Bogdan (U.S. Patent No. 6,040,661).

With respect to claim 29, Bogdan discloses, in Figs. 4A and 7, an electronic ballast for supplying electrical excitation to a discharge lamp; the electronic ballast comprises (1) power conditioning circuitry [112, 116] for conditioning electrical power received from a source of electrical power [114], and producing a conditioned power signal, and (2) a lamp supply circuit

[118, 120, 125] for receiving the conditioned power signal and producing electrical signals to operate the discharge lamp; said lamp supply circuit includes a programmable processor [128] operable to vary an operating parameter (which is operating frequency; see col. 8, lines 16-19) of the lamp supply circuit to enable operation of a plurality of lamp types or sizes (see col. 5, line 66 – col. 6, line 18; col. 7, lines 36-38); said programmable processor [128] is further operable to produce an oscillating processor signal for use in oscillating the supply circuit at a plurality of frequencies (which are from 20 KHz to 47 KHz; see Fig. 4A) to operate discharge lamps of different types or sizes.

With respect to claim 31, Bogdan discloses, in Figs. 4A and 7, an electronic ballast for supplying electrical excitation to a discharge lamp; the electronic ballast comprises (1) power conditioning circuitry [112, 116] for conditioning electrical power received from a source of electrical power [114], and producing a conditioned power signal, (2) a lamp supply circuit [118, 120, 125] for receiving the conditioned power signal and producing electrical signals to operate the discharge lamp; said lamp supply circuit includes a programmable processor [128] operable to vary an operating parameter (which is operating frequency; see col. 8, lines 16-19) of the lamp supply circuit to enable operation of a plurality of lamp types or sizes (see col. 5, line 66 – col. 6, line 18; col. 7, lines 36-38), and (3) a communication port [127] for communicating with the programmable processor [128] from a peripheral device [126].

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 11-13 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caldeira et al. (U.S. Patent No. 5,623,187) in view of Bogdan (U.S. Patent No. 6,040,661).

With respect to claims 11-13 and 20-22, Caldeira et al. discloses all of the claimed subject matter, as expressly recited in claims 1 and 19, except that the ballast of Caldeira et al. does not have a communicating port for communicating with the programmable processor from a peripheral device, which is a computer or a digital communication network.

Bogdan discloses, in Fig. 7, an electronic ballast comprising a communication port [127] for communicating with a programmable processor [128] from a peripheral device, which is a computer [126] or digital communication network.

It would have been obvious to one of ordinary skills in the art at the time of the invention to modify the electronic ballast of Caldeira et al. by additionally configuring a communication port therein so as to be able to connect the programmable processor to a computer or digital communication network for a remote operation control since such an arrangement of the port for communicating with the computer or digital communication network for the stated purpose has been well known in the art as evidenced by the teachings of Bogdan (see col. 7, lines 53-56).

Allowable Subject Matter

9. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

Prior art fails to disclose or fairly suggest an electronic ballast for supplying electrical excitation to a discharge lamp further comprising a programmable inductor circuit having a plurality of inductance values, wherein said programmable processor is operable to select one of said plurality of inductance values for operation of a particular lamp type or size, in combination with the remaining claimed limitations as called for in claim 2.

Citation of relevant prior art

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Prior art Trestman (U.S. Patent No. 6,680,585 B2) discloses a method and apparatus for modulating HID ballast operating frequency.

Prior art Paul et al. (U.S. Patent No. 5,677,602) discloses a high-frequency ballast.

Prior art Holtslag (U.S. Patent No. 5,569,984) discloses a method for detecting arc stabilities in a gas discharge lamp.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy V. Tran whose telephone number is (571) 272-1828. The examiner can normally be reached on M-F (8:00 AM -5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

08/21/2005

THUY V. TRAN
PRIMARY EXAMINER